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EXAMINER

ANDREWS, MELVYN J

ART UNIT PAPER NUMBER

1742

DATE MAILED: 01/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/070,173

Applicant(s)

MORIN ET AL.

Examiner

Melvyn J. Andrews

Art Unit

1742



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 October 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 11, 12 and 14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1 to 10 and 13 drawn to a method for treating copper sulfide containing ore comprising biological leaching.

Group II, claim(s) 11, 12 and 14, drawn to a device for continuously treating copper sulphide containing ores.

The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: The special technical features of Group I cannot be considered to involve an inventive step for the reasons set forth in the International Preliminary Examination Report in view of US 5,919,674, Gomez et al , US 3,890,007 and US 4,729,788.

Applicant's election with traverse of Group I in Paper filed October 28, 2003 is acknowledged. The traversal is on the ground(s) that are set forth in the response filed October 28, 2003. This is not found persuasive because while Claim 14 is a linking claim ; nevertheless, since the special technical features of Claim 1 do not define special technical features which define a contribution which each of the claimed inventions, considered as a whole, makes over the prior art , that is the prior art cited in the International Preliminary Examination Report (see PCT Rule 13.2 ( page T-52)).

The requirement is still deemed proper and is therefore made FINAL.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1 to 10 and 13 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The specification discloses that the **bacterial culture is novel** but there is no indication that a **deposit** of the **novel bacterial culture** has been made (MPEP 2404 ) but this bacterial culture is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 to 10 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite because the expression "Sulfolobus type " is indefinite MPEP 2173.05(c ).

Claim 1 recites the limitation "minerals" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 1 recites the limitation "copper " in line 7. There is insufficient antecedent basis for this limitation in the claim.

Claims 1 to 10 and 13 are indefinite because the steps of the method are not clearly set forth.

Claim 1 is indefinite because the expression comprising a step of biological leaching whereby the minerals are subjected in reactors (1) in cascade arrangement "on line 3 does not clearly recite the other steps required to effect biological leaching.

Claims 7, 8 and 13 do not clearly define the relationships of the "second step" to the step of "biological leaching" and does not clearly define the expressions "first phase" (Claim 7), "second phase " (Claim 8) and "third phase" (Claim 9) in terms of active steps

Claims 1 and 2 are indefinite because the composition of the minerals does not include copper.

Claims 3, 8 and 8 are indefinite because the example "particularly..." is indefinite

Claim 5 recites the limitation "the desired value" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 6 is indefinite because the expression "all along the phase of biological leaching" is indefinite

Claim 7 recites the limitation "the pulp issuing" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim 7 recites the limitation "the iron" in line 6. There is insufficient antecedent basis for this limitation in the claim.

Claim 8 recites the limitation "the liquid issuing " in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 8 is indefinite because the expression "one proceeds" is indefinite

Claim 8 recites the limitation "the pulp obtained" in line 7. There is insufficient antecedent basis for this limitation in the claim.

Claim 9 recites the limitation "the aqueous phase" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 10 is indefinite because the expression "on the order " indefinite MPEP 2173.05 (c ) and the example "i.e. ..." on lines 10 to 12 is indefinite.

Claim 10 recites the limitation "the outlet" in line 2 and "the inlet" on line 3. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tunley (US 5,919,674) in view of Hutchins et al (US 4,729,788). Tunley describes a method for treating copper sulphide concentrates comprising a bioleaching step, carried out in reactors arranged in series for dissolving the copper with a bacteria such as *Sulpholobus* and at an optimum temperature for the bacteria (col.2, lines 54 to 59) but does not disclose mineral sulphides supplied continuously, mechanically agitating the bacterial culture and injecting air into the medium are not explicitly disclosed but Hutchins et al (US 4,729,788) discloses the advantages of these features, such as, "continuous bioleaching" (col.3, lines 30-32 and Fig 1) and "stirred reactors" (col.3, lines 38-40); "aeration using air or oxygen" (col.4, lines 48-52) and (col. 5, line 56 to col. 6, line 25 and Fig 4), it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Tunley method as taught by Hutchins et al, the motivation being to enhance the recovery from ores following pretreatment or ores as taught by Hutchins et al.

Claims 2 to 9 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tunley (US 5,919,674) in view of Hutchins et al (US 4,729,788) as applied to claim

1 above, and further in view of Heinen et al (US 3,890,007). These dependent claims concern measures which would result from normal knowledge of a person skilled in the art particularly with regard to the advantages of precipitating and separating the iron from the copper solutions to be extracted using solvent as disclosed by Heinen et al (col.2, line 11 to col.3, line 31).

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over International Application Publication WO 98/39491 in view of Hutchins et al (US 4,729,788) . The '491 publication discloses a process for leaching of copper from chalcopyrite comprising a bacterial oxidation process using bacterial oxidation controlled by controlling the oxygen supply (page 2, lines 10 to 16) which is applicable to stirred tank leaching methods (page 4, lines 3 to 6) but does not disclose a cascade of tanks but this feature is disclosed by Hutchins et al (see col.5, line 56 to col.6, line 25 and Fig. 4)it would have been obvious carry out the '491 publication process using a plurality of tanks to enhance the recovery from ores following pretreatment of ores as taught by Hutchins et al.

#### ***Allowable Subject Matter***

The following is a statement of reasons for the indication of allowable subject matter: Claim 10 concerns an embodiment enabling the complexity and cost of the processing facility to be reduced which is not described by the prior art.

Claim 10 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

***Information Disclosure Statement***

The information disclosure statement has been electronically copied but the foreign patent WO 96/41025 and the other document Ballester et al have not apparently been copied and were not re-considered. It would be appreciated if copies of these two documents be re-submitted in order to facilitate prosecution of this application. The error is regretted.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melvyn J. Andrews whose telephone number is (571)272-1239. The examiner can normally be reached on 8:00A.M. to 4:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V King can be reached on (571)272-1244. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.

  
MELVYN ANDREWS  
PRIMARY EXAMINER

mja  
January 5, 2004